

## **Remarks**

Claims 43-52 and 54 remain in consideration for this application, with claims 43 and 49 being in independent format. Claims 43, 48, 49, and 50 are currently amended. Claims 1-34 have been previously withdrawn and claims 34-42 and 53 are cancelled.

Claims 43-54 were rejected under 35 U.S.C. 112, first paragraph, because it was alleged that the specification did not provide enablement for how to make and use the invention commensurate in scope with the claims. Specifically, it was alleged that the present invention is not enabled for detecting cytogenetic abnormalities in “any” individual chromosomes. It was admitted that the specification was enabling for a method of screening a human individual for cytogenetic abnormalities. Applicants have amended claims 43, 45 and 49 to recite a “human individual”. Accordingly, Applicants assert that this rejection has been overcome.

Claims 43-52 and 54 were rejected under 35 U.S.C. 112, first paragraph, for failing to comply with the written description requirement. Specifically, it was alleged that claims 43-54 encompass the detection of a cytogenetic abnormality or chromosomal imbalance in “any” individual by use of “any” probe less than 25kb in length and within 1500kb of the terminal nucleotide. It was further alleged that claim 45 further draws the claims to probes that hybridize to a single genomic location so that only a single hybridization signal is detected. Applicants assert that the claims are now limited to humans, thereby overcoming the portion of this rejection directed toward “any” individual. Applicants further note that the Office Action admitted that the specification provides adequate written description for the human single copy probes described, but does not provide adequate written description for probes of other species. The claims are

now limited to single copy probes. Accordingly, Applicants assert that this portion of the rejection has been overcome.

Claims 43-48 were rejected under 35 U.S.C. 112, second paragraph, for being indefinite for failing to point out and distinctly claim the subject matter which the applicant regards as the invention. Specifically, the phrase “in said genome” in the last line of claim 43 had insufficient antecedent basis. Applicants have amended this phrase to refer to the chromosome, as suggested by the Examiner. Accordingly, Applicants assert that this rejection has been overcome.

Claims 43-54 were rejected under 35 U.S.C. 102(b) for being anticipated by Knight et al. (Am. J. Human Genetics (2000) volume 67, pages 320-322) (“Knight I”). Applicants assert that the probes of Knight I are not “single-copy” probes as now claimed. Instead, the probes of Knight I are YACs, BACs, and PACs, none of which are single copy probes. Such probes and the problems associated therewith were discussed in the Description of the Prior Art section of the present application on pages 5 and 6 as well as on page 9. As is known in the art, YACs, BACs, and PACs all contain repetitive DNA sequences and suffer from non-specific cross hybridization. Thus, even though they may contain segments of single copy DNA, the presence of repetitive sequences surrounding these single copy segments means that they can be called unique, but not single copy. The fact that the terms “unique segments” and “single copy sequences” is evident in the specification in the second sentence of the Summary of the Invention wherein it is noted that “the present approach develops unique sequence, single copy hybridization probes.” If these terms were synonymous, the sentence would be

redundant. Accordingly, because the probes of Knight I are not “single copy” as now required by the claims, it cannot be said that the claims are anticipated by Knight I.

Claims 44, 48, 49-52 and 54 were rejected under 35 U.S.C. 103(a) as obvious over Knight I in view of Knight (Journal of Medical Genetics (2000) vol. 37, pages 401-409) (“Knight II”). Thus, it appears that claims 43 and 45-47 are not included in this rejection. However, these claims (43 and 45-47) were specifically discussed in the rejection such that Applicants have assumed that all pending claims fall under this rejection. If this interpretation is not correct, Applicants respectfully request an opportunity to respond prior to the next Office Action. In response to this rejection, Applicants assert that neither Knight I or Knight II teach or suggest using single copy probes in the methods described therein. As noted above, for Knight I, Knight II also uses YACs, BACs, and PACs, all of which include repetitive DNA sequences. Accordingly, it cannot be said that Knight I and Knight II render the present invention obvious and Applicants respectfully assert that this rejection has been overcome.

Claims 43-45, 49, and 51 were rejected for double patenting over claims 1 and 3 of U.S. Patent No. 7,014,997 in view of Knight I. Applicants wish to address this rejection once the claims of the present application are found to be allowable. If it is determined that a double patenting issue does exist, Applicants will file a terminal disclaimer.

In view of the foregoing, it is respectfully submitted that all rejections have been overcome and that the claims as they now stand are patentable over the art of record and a Notice of Allowance appears to be in order and is courteously solicited. Any additional

fee due in connection with this amendment should be charged against Deposit Account No. 50-1662.

Respectfully Submitted,

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(Docket No. 33026)